

**Land and Atmosphere Near real-time
Capability for EOS (LANCE)
User Working Group (UWG) Meeting**

**November 9th 2012
Telecom**

Report Date: 30 November 2012



1. LANCE UWG Members and Attendees

NAME	AFFILIATION
Chris Justice	University of Maryland
Kim Richardson for Jeff Hawkins	NRL/Monterey
Jim Rowland for James Verdin	USGS
Gary Jedlovec	NASA/MSFC/SPoRT
Rama Nemani	NASA/ARC
Nickolay Krotkov	NASA/GSFC
Arlindo Dasilva	NASA/GSFC
Mike Fromm	NRL
Robert Brakenridge	Colorado/Dartmouth Flood Observatory
Brad Quayle	Forest Service
Jose Harris	DOD
Justin Sherin*	HIFLD/WWHDG
Mark Trice*	MD DNR
George Blaidell	NSF

* unable to attend

2. Minutes

2.1. Welcome – Chris Justice UWG Chair

Chris Justice (UMD), chair of the LANCE UWG, welcomed everyone to the telecom. He said that the purpose of the UWG is to provide feedback and guidance to LANCE. The aim is to meet once a year with an interim telecom to cover updates. He said that in his view LANCE continues to be one of the big success stories of the NASA data systems. As chair, one of his roles is to promote and encourage the use of LANCE data. He finds there is a lot of interest in LANCE because the NRT aspect is very important for real time applications. Justice said UWG members should also be reaching out to the broader members of their respective communities to promote the use of LANCE.

Dr Justice acknowledged the need for a LANCE-like capability from VIIRS to meet NASA application needs and said there is some interest from NASA HQ to look at this for upcoming missions, beyond EOS. He said there would be some discussion on this later in the telecom.

2.2. Introduction to new UWG member

New members of the UWG are George Blaisdell (NSF), representing the cryosphere community, Justin Sherin (HIFLD) replacing Chris Vaughan from FEMA and Jose Harris replacing Bradford Green (DOD).

2.3. Status, Actions and Accomplishments

Kevin Murphy (NASA GSFC) summarized progress since the February 2012 UWG meeting. Overall good progress has been made. The status of recommendations since the last UWG meeting was circulated to all telecom participants. The highlights are as follows:

- 2.3.1. LANCE has transitioned users to the central EOSDIS User Registration System.
- 2.3.2. New products / product evaluation
 - The NRL AOD has been added as a new data product in to LANCE.
 - v3.4 L2 product from MLS was recently added to LANCE.
 - MISR products are still under evaluation and will be considered further by the science team in December 2012.
- 2.3.3. FIRMS has been operational in LANCE since May 2012. Over 2000 fire email alerts are sent daily.
- 2.3.4. Tests are ongoing to see how LANCE data could be served through the ECHO data search catalogue. This would enable users to search both NRT and science quality data in one place.
- 2.3.5. Improvements to the LANCE website (<http://earthdata.nasa.gov/lance>) are ongoing: to improve the user interface, better integrate Rapid Response and FIRMS and allow easier access to products using visualization tools. The improvements also include use of a central user support tool and an interactive Wiki for LANCE users. The wiki is used to house LANCE presentations (<http://earthdata.nasa.gov/wiki>) including a general LANCE presentation should any members of the UWG want to use these slides.
- 2.3.6. There has been good feedback on the use of Worldview (interactive imagery visualization tool) and the Global Imagery Browse Services (GIBS) which provides the tiled services for Worldview as well as enabling users to view data in their own standard clients. A number of improvements have been made to the Worldview. These include: the incorporation of a color bar / legend to allow better interpretation of images and imagery download support (should be released in December 2012).

2.3.7. There are plans to deploy GIBS for science data products. This work has been started.

2.3.8. A number of outreach activities have been undertaken. These include:

- Near-Real Time session planned at AGU (December 2012)
- A LANCE poster was submitted to GEO, Brazil November 2012 and one to the Scientific Committee on Antarctic Research, July 2012
- 2 presentations at IGARSS July 2012, 1 at AGU February 2012
Invited oral presentations at ESIP and RS workshop in Chile
- Earth Observer articles 1 published, 1 submitted

2.4. Update on AMSR-E (previously available through LANCE)

On 04 October 2011, the AMSR-E instrument on board the Aqua satellite stopped producing data due to a problem with the rotation of its antenna. NASA has been working with the Japan Aerospace Exploration Agency (JAXA) to assess the condition of the AMSR-E instrument and consider future steps. Helen Conover (UAH) provided an update on the AMSR-E recovery efforts, based on a briefing from JAXA on 21st September 2012.

- Stage 1: restarted the instrument without rotation. It has been in continuous operation since February 2012 (collecting only one pixel of data)
- Stage 2: spin up / spin down tests (six attempts). These tests were undertaken in September 2012. There were no significant satellite attitude errors but the maximum rotation achieved was approx. 1 RPM. Overall this was only moderately successful as they were not able to spin up to their goal of 4 RPM (one tenth of nominal). This has led to a revised goal (of only spinning up to 2 RPM) for stage 3.
- Stage 3: The goal is to operate AMSR-E at 2 - 2.5 RPM continuously for a minimum of 2 months to allow cross-calibration for AMSR2. This is due to start at the beginning of Dec.
- No further useful NRT data is expected from AMSR-E.
- AMSR2 is now part of the A-train and L1 data should be released in January 2013 from JAXA. The initial product (O1A) will be available from JAXA and the same data from NOAA.
- The Precipitation Processing System (PPS) at GSFC will be bringing in the O1A data making a Level 1C and a rain product from AMSR2. It is understood this would be a NRT product.

C. Justice asked how this would relate to LANCE? K. Murphy said there are currently no plans to include AMSR2 in LANCE. Once NRT source is established the aim will be to promote this capability from the LANCE website and track how well the needs of previous LANCE users and to track to see there are any issues accessing the data.

Action - Find out more about the proposed AMSR2 capability and report back on this at the next UWG - K. Murphy and H. Conover

2.5. Summary Metrics

Murphy provided a summary of metrics. After the EOS improvements about a year ago, LANCE is generally exceeding the latency targets. There is a general increase in distinct users to LANCE each month.

2.6. Potential Future Upgrades

2.6.1. MISR NRT Product

Last summer there was a request to add MISR products to LANCE. Science quality evaluation of MISR session-based (NRT) wind products are ongoing and will be discussed again at the MISR science team meeting in December. The science processing team agrees that MISR NRT products should be feasible within the necessary time windows. Some timing tests have been done. If MISR can get the additional L0 test data early in 2013 and the testing goes well, they might be ready for NRT production by Summer 2013.

2.6.2. Daily rolling NDVI / EVI product

The request for rolling NDVI/EVI product came from Arlindo da Silva (GSFC). The product would be used for dust emissions modeling and aerosol forecasting. Da Silva asked members of the International Cooperation for Aerosol Forecasting (ICAF) group to endorse this request which they did. (The ICAF is made up of GMAO, ENCEP, NRL, ECN, the UK Met office and partners in Japan).

It was acknowledged that this product would be useful for the aerosol forecasting community however K. Murphy said the enhancement request in its current form needs to be shored up: the technical and production details need to be given more consideration and a sponsor from NASA HQ is still required.

Action - Finalize technical details for NDVI enhancement - LANCE manager

Action - Identify NASA HQ sponsor NDVI enhancement - C. Justice

Da Silva said that in addition to the positive response he got from ICAF members for a rolling NDVI product, the users said that a rolling surface albedo product would also be of great value. This is to be considered as a separate request.

Ed Masuoka (GSFC) pointed out that a rolling Surface Albedo product is not made now as it is not being stored in the LP DAAC. It is being planned for Collection 6 but storage at the LP DAAC has not yet been approved.

Action - Look in to status of Surface Albedo product - K.Murphy

Action - Complete enhancement request for rolling Surface Albedo product: A. Da Silva will start this process and get letters of support, write up rationale and contact NASA HQ for sponsor for the medium weather forecast

2.7. Ongoing Activities

- 2.7.1. Website phase 2 - due for completion in Early 2013
- 2.7.2. Continue to evaluate new methods to access NRT data including merging NRT and science data in a search and order capability, making sure that users understand the difference between the two.
- 2.7.3. Evaluation of new products
 - MISR – ongoing, dependent on science team
 - NDVI / EVI
 - Rolling surface albedo product will be considered
- 2.7.4. Continue development activities on Worldview and GIBS as they pertain to LANCE.
- 2.7.5. Outreach to potential new LANCE users. We are still looking for new users for the UWG. Very pleased to have new users - George Blaisdel to represent the cryosphere, Justin Sherin (representing HIFLD) who is working directly with disaster response.
- 2.7.6. Monitor AMSR2 / VIIRS

K. Murphy said that in addition to user feedback about AMSR2 data, efforts will be made to document issues encountered by LANCE users accessing VIIRS. A request was made to the UWG to let Kevin Murphy or Diane Davies (LANCE) know if they have any problems.

C. Justice commented that at the last UWG users were requesting LANCE capabilities for VIIRS. There is an opportunity to make a case for a VIIRS LANCE capability for the land, atmosphere and ocean communities. C. Justice will be putting in a report to NASA HQ from the land group of the VIIRS Science Team with recommendations on the VIIRS needs from the NASA science community and will be looking for contributions for the submission. He encouraged others to do the same for atmospheres and oceans. This idea was supported by several members:

R. Brackenridge said he was encouraged to hear this. In his experience the community does not want to depend on the CLASS system so any attempt to incorporate VIIRS down the line is great. He added that there are so many products which are dependent on NRT MODIS, and users will want VIIRS delivered in a similar way.

E. Masouka said given the direction they had from NASA HQ, MODAPS is making VIIRS products (equivalent to MODIS products already in LAADS) for the land PEATE. These are products are mostly being accessed by the science users but are open to the public. UWG members are encouraged to look at this and see if these meet there needs. MODAPS is waiting for guidance on the long term production for these products.

Action - Send the url for ordering VIIRS LAADS distribution - Diane / Ed

Gary Jedlovec (NASA SPoRT) commented that SPoRT demonstrated the use of VIIRS day / night bands for Hurricane Sandy and that the images became very high profile at

NASA HQ. He strongly encourages that, at a minimum, global VIIRS day / night bands are incorporated in to LANCE for the disaster community.

He added that as VIIRS crosses discipline applications a unified community request for VIIRS in LANCE should be formulated.

F. Lindsay was fully supportive of this idea and said the Applied Science Program is looking how they can get LANCE integrated in to their disasters work. He has a number of ideas on this including the consideration of hybrid products that might be developed through LANCE.

Action C. Justice, F.Lindsay and K.Murphy to have strategic discussion on how to better integrate LANCE in to disasters / ASP

C. Justice commented that NASA data systems have always been driven by the science needs but suggested that with the success of LANCE it may also be time for NASA science applications to also drive data needs and ultimately new missions. G. Jedlovic said he would encourage this to be done as a cross-discipline request for disaster applications.

Brad Quayle echoed sentiments on getting VIIRS in to LANCE especially for fire related products. He would like to see the data in FIRMS type applications.

KMurphy suggested the UWG should formulate a document highlighting their need for VIIRS, and possibly deficiencies from the current distribution system, that could be used to represent the various community interests.

Action UWG to formulate a request for LANCE capability for VIIRS (currently this is not a LANCE project responsibility). To be led by C.Justice - come up with response and circulate to all for comments

3. Other Comments

Da Silva asked about overlap in LANCE of MODIS C5 and C6. E. Masouka provided an update on the status of processing. C6 will start in LANCE when C6 reprocessing almost complete and C6 forward processing begins. There will be transition period where both C5 and 6 are available to allow overlap.

Action LANCE to provide the date and transition criteria for C6

G. Jedlovic asked about a demo for Worldview. K. Murphy said we could do a one-on-one demo. He also pointed to the wiki and mentioned that there would be a demo at AGU. SPoRT have had to develop a TWMS for Hurricane Sandy and there maybe some collaboration opportunities.

C.Justice asked for updated slide set on LANCE to be sent round to UWG members so they can use it for LANCE outreach.

Action - Updated slide set on LANCE to be sent round - D. Davies

4. Closing remarks

LANCE has undergone a number of staff changes. Mike Teague left earlier than anticipated. Steve Kreisler took over as interim Operations Manager but has moved on to another role within NASA. Diane Davies has stepped in to take on this over the last couple of months.

K. Murphy concluded by reminding anyone that if they have questions they can contact him or D. Davies. C. Justice added that if anyone wants to contact him as chair of the UWG with concerns, comments or suggestions on how to improve the LANCE system or the UWG they are welcome to do so.

5. Time-frame for Next Meeting

The next meeting should be set for the May 2013 time-frame.

Action Send round a doodle poll to check availability for UWG meeting in May 2013